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ABSTRACT

Missouri manufacturers of electrical and electronic equipment and related products were surveyed to identify entry-level skills training decision factors and the extent of entry-level skills training by the manufacturers. Two instruments were constructed for use in the study. The Training Decision Inventory was used to assess the influence of specified issues on manufacturers' decisions to offer training; the Survey of Entry-Level Skills Training was used to ascertain the nature and extent of entry-level skills training. Results indicated that issues related to employee motivation/affirmative action, technology/productivity, and education preparation affected manufacturers' decisions to offer entry-level skills training. Cost benefit, expenditures for training, and labor market issues had equivalent influence on the decision-making process with respect to whether or not firms offer training. Data on the nature and extent of existing skills training were inadequate in number to allow the drawing of generalized conclusions. Implications for vocational educators from study findings focused on awareness of why employers provide training and on the decision-making process. Topics for further investigation were suggested. (Appendixes, amounting to over one-half of the report, include data collection procedures, references, the instruments, and eight data tables.) (YLB)

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FINAL REPORT

SURVEY OF ENTRY-LEVEL SKILLS TRAINING BY SELECTED MISSOURI MANUFACTURERS

Project No. 83-131/132-600-1 (116-116)

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July 15, 1983

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ABSTRACT

Title: Survey of Entry-Level Skills Training by Selected Missouri Manufacturers

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Location: Columbia, MO 65211

Phone: 314/882-2883; **Starting Date:** 7/1/82; **Ending Date:** 6/30/83

Objectives of Project:

1. To construct an instrument, Training Decision Inventory, to assess the influence of specified issues on manufacturers' decisions to offer entry-level skills training; to identify the variables which influence selected Missouri manufacturers' decisions to offer entry-level skills training.

2. To construct a second instrument, Survey of Entry-Level Skills Training, to ascertain the nature and extent of existing entry-level skills training conducted by respondents to the Training Decision Inventory.

A Brief Description of the Investigation:

This survey was a two-part study designed to survey Missouri manufacturers of electrical and electronic equipment or instruments and related products with respect to entry-level skills training decision factors and the extent to which this group of manufacturers provide entry-level skills training.

Based on the results of this investigation, the following conclusions have been drawn. Issues related to employee motivation/affirmative action, technology/productivity, and educational preparation drive manufacturers' decisions to offer entry-level skills training. Cost-benefit, expenditures for training, and labor market issues have equivalent influence on the decision making process with respect to whether or not firms offer training. Follow-up descriptive data obtained from firms offering entry-level skills data was inadequate in number to allow the drawing of generalized conclusions.

STATEMENT OF THE PROBLEM

Economists, educators, and management theorists have offered a laundry list of issues which influence the decision-making process in regard to private sector, employer sponsored training. With scarce resources for vocational education and the mandated ties with business and industry in the Job Training Partnership Act, lack of specific information concerning the issues and factors which are used by the private sector in making training decisions would appear to be an unaffordable luxury. In particular, vocational education planners at the state and local levels need accurate information in regard to private sector training to:

1. Verify the need for vocational programs and services,
2. Avoid duplication of effort,
3. Improve the quality of vocational programs, and
4. Encourage economic development.

Little is known concerning the exact nature and scope of entry-level skills training in industry (Doeringer, 1981; Fraser, 1980). Inadequate employer recordkeeping, too few surveys involving representative samples of companies, failure to follow up on nonrespondents, and the lack of comprehensive data collection process are cited as reasons for the lack of information (Fraser, 1980; Selesnick, 1981; Wenig & Wolansky, 1972; Wexley & Latham, 1981).

Even less is known of the issues and factors which influence the offering of entry-level skills training in industry. Doeringer (1981) has called for a program of basic research to address the determinants of workplace training. Stromsdorfer (1981) cautioned against generalizing on the basis of studies of a few individual corporate training programs and urges assessments "to develop a better understanding of how training decisions are made within private industry . . . to determine how and why education and training programs differ among firms" (p. 86). In addition, he called for examination of the role of training in firms employing fewer than 500 employees, since such firms have been excluded from most major studies (p. 47).

The knowledge problem is exacerbated when specific industries are examined. Projections concerning the fastest growing and largest job gains for selected industries between 1979 and 1990, published by the Missouri Occupational Information Coordinating Committee (1981), identify the manufacturers of electrical and electronic equipment or instruments and related products as growth industries. However, the issues influencing this group's decisions to provide entry-level skills training have not been identified. Therefore, the focal point of this study was to identify entry-level skills training decision factors and the extent of entry-level skills training within these two groups of Missouri manufacturers.

OBJECTIVES

The purposes of this study were:

Objective 1. To construct an instrument, Training Decision Inventory, to assess the influence of specified issues on manufacturers' decisions to offer entry-level skills training; to identify the variables which influence selected Missouri manufacturers' decisions to offer entry-level skills training.

Objective 2. To construct a second instrument, Survey of Entry-Level Skills Training, to ascertain the nature and extent of existing entry-level skills training conducted by respondents to the Training Decision Inventory.

Objective 1. The portion of the study related to Objective 1 was organized to answer the following questions:

A. To what extent are there differences between firms offering structured entry-level skills training and firms not offering structured entry-level skills training as they consider issues which influence the decision-making process related to training?

B. To what extent are there small firm and large firm differences on issues which influence the decision-making process related to training?

C. To what extent are there interaction effects between the offering of training and firm size when considering issues which influence the decision-making process related to training?

Findings

The data for these research questions were obtained from Missouri manufacturers of electrical and electronic equipment or instruments and related products who completed the Training Decision Inventory.

The three research questions tested in this investigation focused on the main and interaction effects of two independent variables, training offered or not offered by the firm and size of firm as measured by total number of employees. A two-way multivariate analysis of variance was conducted to test these questions. The results of the analysis indicated significant differences in the mean scores for both of the main effects and the interaction effect. (See Tables 3-8, Appendix D.)

This analysis was followed by a series of univariate analyses of variance which found significant differences among the training variable means existed for three of the six subscales of the Training Decision Inventory. The subscales for which significant differences were found were Employee Motivation/Affirmative Action, Technology/Productivity, and Educational Preparation. No differences were found in subscale mean scores for Cost/Benefit, Expenditures, and Labor Market Issues. An examination of the least-squares means for each of the six dependent variables (subscale means) on both levels of the training variable revealed higher scores for firms offering training on the three subscales found to have significantly different means.

Discussion: The findings of this study were not completely consistent with the results of previous research related to training in industry. The percentage of firms offering training who responded to the study was within the range of percentages reported by the Bureau of Labor Statistics (1977), Harvey (1980), and Neary (1974) for firms offering training. In regard to previous findings that larger firms, employing 500 or more employees, are more likely to offer training than small firms (Bureau of Labor Statistics, 1977; Harvey, 1980; Lusterman, 1977; Task Force, 1968; and others) the results of this study are not consistent. Of the 61 firms reporting training offered, 23 firms (38%) were small firms with 1 to 74 employees. Of the 38 larger firms who reported offering training, only 12 (19.6%) had more than 500 employees. In attempting to compare these findings with previous studies, it must be noted, however, that the research conducted by Franke and Sobel (1970), Hailer (1979), and Lusterman (1977) excluded firms with fewer than 500 employees. (See Tables 1 and 2, Appendix D.)

The multivariate analysis of variance results indicated the effect of the dependent variable size of firm was statistically significant at the .05 level. The interaction effect of training offered and size of firm was also found to be statistically significant at the .05 level. However, the analysis of variance for the dependent variable subscales indicated that the only variable statistically significant at the .05 level was the training variable.

The study also found significant differences among the mean scores of the Training Decision Inventory subscales related to the issues influencing the decision making process with respect to training. Responding firms' mean scores on Subscales 1, 2, and 5 were not significantly different on any independent variable or combination of variables. On Cost/Benefit, Expenditures, and Labor Market Issues, firms offering training and firms not offering training as well as small firms and large firms did not differ significantly in their responses to the influence of these issues in the decision making process.

Cost-Benefit, Expenditures: This study did not substantiate the findings reported by Harvey (1980) that concern related to return on investment in training had at least some deterrent effect. It did substantiate findings from the same study that little evidence exists to support the belief that firms refrain from training due to the risk of training employees and losing them to other firms. In addition, the findings of this study are inconsistent with Harvey's findings and more consistent with the Bureau of Labor Statistics' (1977) findings in regard to small firms' concerns about the costs and financial risks attached to training.

Labor Market Issues: No significant differences were found in mean scores of firms offering or not offering training on Subscale 5. Again, these findings are inconsistent with the findings of Harvey (1980) which suggested that firms offering training perceive training as an effective strategy for meeting their workforce requirements. The findings of this study were more consistent with the Bureau of Labor Statistics' (1977) results related to labor market issues, but are difficult to compare since questions asked of firms offering training were different from questions asked of firms reporting no training offered.

For the three subscales of the Training Decision Inventory on which statistically significant differences in mean scores were found when analyzed by the variable training offered or not offered, the results of this study are generally consistent with previous findings. Wexley & Latham (1981) attribute training and development activities conducted by business and industry to the desire to attain one or more of the following organizational goals: improved employee self-awareness, increased individual employee skill or expertise, and/or increased employee motivation to perform job-related tasks. Items comprising the Employee Motivation/Affirmative Action subscale were rated as having a greater influence on the training decision making process by firms offering training and little or no influence by firms not offering training. Such findings substantiate, also, the report by Cruz (1976) of

Lockheed Missile's decision to provide entry-level skills training as part of an organizational commitment to affirmative action.

The mean scores of firms responding to items on Subscale 4, Technology/Productivity Issues are consistent with the findings of Hailer (1979), Harvey (1980), and Heistand (1974) as well as Cruz (1976) and Rosenthal (1982) in regard to the impact of changing technology on firms' decisions to offer training. The data from this study did not allow an analysis of firms' responses in terms of the level of technology characterizing their plants' operations. Therefore, interpretation of the higher mean scores of firms offering training as compared to firms not offering training is constrained by this lack of knowledge.

The findings related to Subscale 6, Educational Preparation, are also consistent with the Bureau of Labor Statistics' (1977) study which reported the reason most frequently given by employers for providing training was that job skills can best be learned through company training programs. Inadequate educational and/or training background of employees was also reported as a major reason for offering training in the Bureau of Labor Statistics' study. Training Decision Inventory items related to educational preparation included specific reference to vocational schools. The items comprising Subscale 6 focus on statements regarding public and private vocational schools' inability to train the number, level, and type of employee required. Therefore, a higher mean score on this subscale must be interpreted as a negative response. The higher mean scores on this subscale for firms offering training suggest that the perception of the inadequacy of employees' educational preparation influences the training decision making process. Furthermore, the findings of this study are not inconsistent with economic theories expressed by Stromsdorfer (1981) and others in regard to the willingness of firms to provide firm-specific training. However, interpretation of the findings of this study is constrained by the lack of information in regard to the specific or general nature of the entry-level skills training actually provided by responding firms.

Objective 2. The data for Objective 2 were obtained from respondents to the Training Decision Inventory who had reported offering structured entry-level skills training. The Survey of Entry-Level Skills Training was developed to elicit data with respect to the extent to which firms offered training for eighteen occupations. The occupations specified were selected according to two criteria: occupations for which vocational education either could or does offer training; and occupations in which substantial numbers of workers in the industries surveyed are employed.

Specifically, the instrument was designed to identify the occupations for which entry-level skills training is provided; ascertain employer preferences related to educational preparation of prospective employees; tabulate the number of employees receiving training in comparison with the total number of workers employed in the occupation; ascertain employer predictions concerning the extent of future training; and identify the predominant mode of training offered.

Findings

Respondents reported offering training most frequently for the following occupations:

Occupation	Percentage of Respondents Reporting Training
Computer Operator	22%
Electrician	17%
Electronics Assembler	19%
Electronics Technician	25%
Welder and Flamecutter	17%
Machine Tool Set-Up Person	22%
Mechanic, Maintenance	31%
Tool and Die Maker	19%

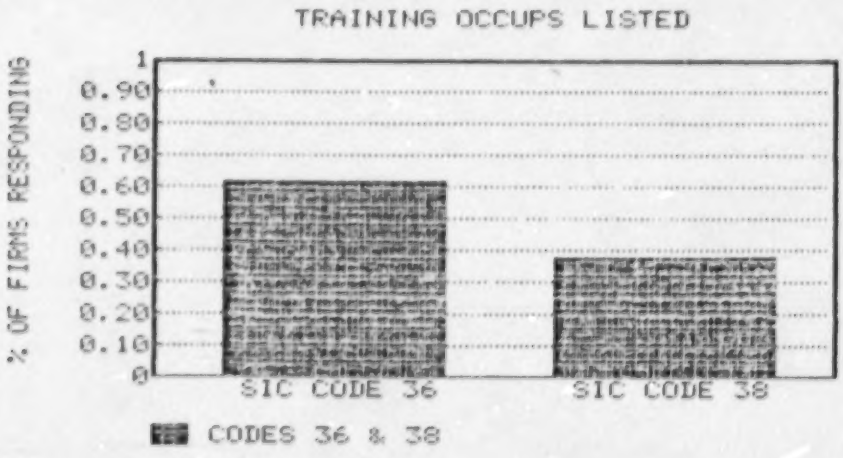
Occupations for which fewer than 16% of respondents reported offering training include:

Computer Programmer
Electrical Technician
Lay-Out Person, Metal
Patternmaker, Metal/Wood
Industrial Engineering Technician
Filer, Grinder, Chipper, Cleaner, Polisher
Drafter
Sheetmetal Worker
Mechanical Engineering Technician
Plumber and/or Pipefitter
Prosthetic Technician
Prosthetist

Paint and Metal Finisher
Metal Conditioner
Graphic Artist
Dental Laboratory Technician
Insert Operator-Printer
Surgical Instrument Maker (Apprentice)
Janitor
Quality Assurance Checker
Instrument Technician
Air Brake Repair Technician
Coil Winding Operator
Fabricator
Painter Helper
Shipper and Receiver
Sales
Compounder
Machine Adjuster
Micrographics
Machine Operator
Motor Assembler
Kite Maker
Machinist
Electroplater

Among responding firms previously reporting training offered, 61% reported training for one or more of the 18 specified occupations; 39% of the respondents reported training offered, but not for occupations specified.

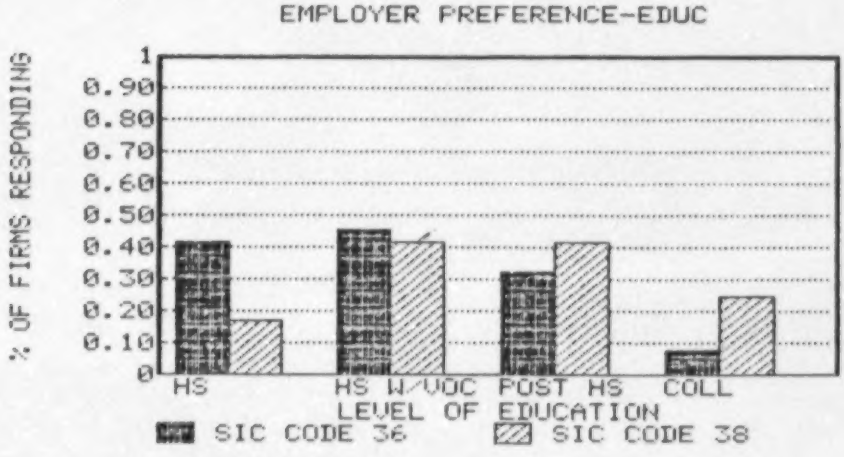
Figure I



Employer preferences related to educational preparation of prospective employees are reported in Figure 2. Manufacturers of electrical and electronic equipment reported the following preferences: high school graduates - 42%, high school with specialized vocational training - 46%, post high school technical training - 33%, and college graduates - 8%. It should be noted that respondents checked more than one response when reporting training offered for more than one occupation; therefore, percentage totals exceed 100%.

Manufacturers of instruments and related products reported the following preferences: high school graduates - 17%, high school with vocational training - 42%, post high school technical training - 42%, college graduates - 25%.

Figure 2



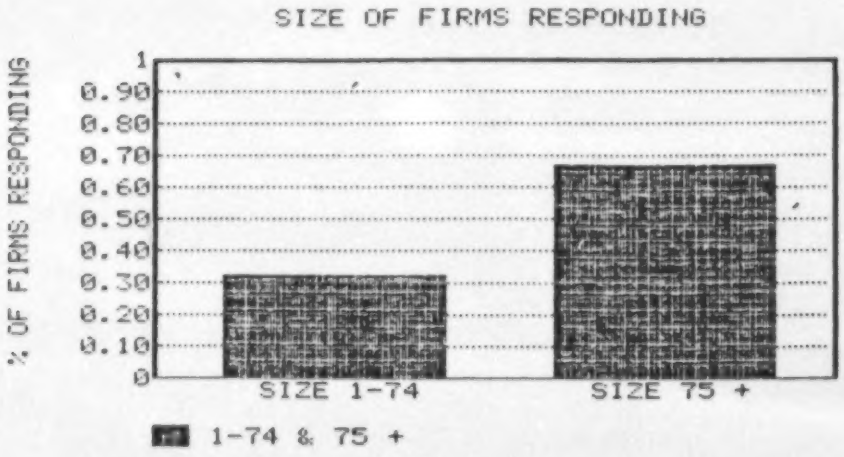
The study did not yield sufficient usable data to tabulate the number of employees receiving training in comparison with the total number of workers employed in the occupation. Some respondents did not attempt to provide this data, others did not interpret the directions correctly, and several firms reported no training during 1982 due to hiring freezes.

With respect to employer predictions concerning the extent of future training, 42% of the respondents reported an expected increase in the amount of entry-level skills training activities for the next five years; no firms reported an expected decrease in entry-level skills training; and 39% of the responding firms expect to maintain the present extent of entry-level skills training.

The predominant training mode reported was on-the-job training (OJT) as opposed to off-production-site training (OPST). Manufacturers designated as SIC-36 reported OJT for 27 occupations and OPST for 12 occupations. SIC-38 firms reported OJT for 26 occupations and OPST for 7 occupations.

Discussion: The small N (36 usable returns) prohibits generalizing beyond the groups of manufacturers studied. However, a few observations concerning trends are apparent. Consistent with previous studies, size of firm influenced the response rate of firm. As show in Figure 3, 33% of responding firms emnploy from 1 to 74 workers; 67% of responding firms employ 75 or more workers.

Figure 3



With respect to employer preference related to educational preparation of prospective employees the type of manufacturer appeas to influence preferences. The level of education preferred by SIC-36 manufacturers tends toward the lower end of the range of choices while SIC-38 manufacuters expressed a preference for a higher level of education. The sizeable number of unskilled and semi-skilled workers such as assemblers employed in the manufacturing of electrical and electronic equipment may account for the preference for less educated employees among this group. Likewise,

manufacturers of instruments and related products employ fewer unskilled workers and more technicians, although the average size of firm is smaller for this group.

POPULATION AND SAMPLE

The population of the study consisted of all industries in Missouri classified as Division D-36 and D-38 according to the Standard Industrial Classification (SIC) code developed by the Office of Mangement and Budget. The Standard Industrial Classification Manual (office of Management and Budget, 1972) was developed for use in the classification of establishments by the type of activity in which they are engaged. The subjects for the study were selected based upon MOICC Occupational Data Book (1981) information and Bureau of Labor Statistics projections for manufacturing industries.

Third quarter 1981 Missouri Employment Security records identified 348 Missouri establishments, SIC-36 and SIC-38, whose major product or activity was the manufacturing of electrical and electronic equipment or instruments and related products. Informative Data Corporation (IDC), publisher of the Missouri Directory of Manufacturing and Mining 1982 (IDC, 1982) identified 428 Missouri establishments manufacturing electrical and electronic products (SIC-36) or instruments and related products (SIC-38).

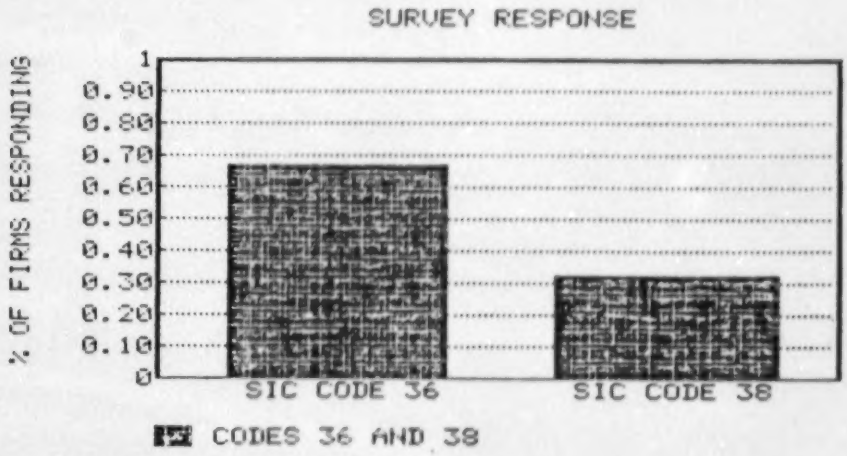
The frequency distributions of firms comprising the population for the study are reported in Table 2. Of this population, 63.3 percent were classified as SIC-36 and 36.7 percent were classified as SIC-38. Descriptive data available from IDC in regard to size of firms as measured by total number of employees are presented in Table 3. The data reveal a preponderance of small firms in the population, with firms emloying fewer than 75 employees accounting for 62.9 percent of the population.

Of the 428 instruments mailed, 5 were returned by the U.S. Post Office as undeliverable. Incompletely marked or otherwise unusable instruments were returned by 14 firms. A total of 195 usable instruments provided the data for the first study.

A frequency count revealed 119 firms classified as SIC-36 and 76 firms classified as SIC-38 responded to the Training Decision Inventory. Of the responding firms, 134 reported no entry-level skills training offered, and 61 reported offering entry-level skills training.

The 61 firms reporting training offered were mailed a follow-up instrument, the Survey of Entry-Level Skills Training, in March 1983. A second questionnaire was mailed in April to firms not returning a questionnaire. The second survey yielded 36 usable returns. The SIC category of respondents is indicated in Figure 4.

Figure 4



CONCLUSIONS

Based on the results of this investigation, the following conclusions have been drawn.

1. Issues related to employee motivation/affirmative action, technology/productivity, and educational preparation drive manufacturers' decisions to offer entry-level skills training.

2. Cost-benefit, expenditures for training, and labor market issues have equivalent influence on the decision making process with respect to whether or not firms offer training.

3. Follow-up descriptive data obtained from firms offering entry-level skills data was inadequate in number to allow the drawing of generalized conclusions.

Implications

Various implications can be drawn from the results of this study. First, the results should be viewed as exploratory findings in an area of knowledge development requiring extensive additional research. The importance of business and industry's role in providing entry-level skills training demands better definition and understanding of that role and the issues which influence the decision making processes in regard to training.

Prior to this study, there was no instrument designed specifically to assess the degree of influence that various issues exert on the decision making process related to training. As a result of this study, the Training Decision Inventory was developed and is available for use in investigating training decisions.

Based on the findings and conclusions of the study, the following implications seem warranted:

1. Vocational educators who provide skills training under the Job Training Partnership Act should be aware of the issues which influence training decisions in the private sector in order to more advantageously cooperate with Private Industry Councils in developing training programs. For example, vocational educators who offer customized skill training programs in the private sector should recognize the importance that employee motivation and technology and productivity issues hold for employers. Vocational educators should seek to address these issues in designing and promoting their programs.

2. Vocational educators should assume that cost-benefit issues and expenditures are important issues in relation to the training decision making process in the private sector. The results of this study indicate only that there are no significant differences in the influence of cost-related issues on training decisions.

3. Vocational educators should be aware of the perceptions of manufacturers in regard to educational preparation of employees as revealed by this study. Since a significant difference existed on this topic between firms offering training and firms not offering training efforts should be directed toward improving the perception of the private sector in regard to vocational education. To address the public perception of vocational education's role in preparing individuals to become productive employees, vocational educators should work closely with advisory committees composed of business and industry members.

4. Vocational educators should be cognizant of the results of this study which indicate 38% of reporting firms with fewer than 75 employees do provide employee-sponsored training. In planning programs to meet the needs of all firms, consideration should be given to the training needs of smaller firms.

5. Vocational planners should be aware of the occupations for which firms reported offering the most training, the predominant training mode, and employer preferences with respect to educational preparation of prospective employees to better serve the training needs of this group of manufacturers.

Recommendations for Further Study

Based on the research conducted in this study, the following studies are suggested for further investigation:

1. The relationship of other independent variables to the issues influencing the decision making process in regard to entry-level skills training should be examined. Examples might include type of manufacturer, rural or urban location, and union or non-union plant.

2. The study should be replicated with a larger N to allow additional levels of the independent variables to be examined. For example, size of firm should be examined in terms of small, medium, large, and perhaps very large firms.

3. Other types of manufacturers and/or businesses other than manufacturing should be surveyed to ascertain differences in the issues which influence these training decision making processes.

4. The effect of various levels of technology in the workplace on the issues influencing the decision making process with respect to entry-level skills training should be examined. For example, firms might be asked to provide information in regard to their current technological production processes which could be used to classify firms according to a stratification from low to high technology.

5. Human resource costing demands additional study to ascertain the number and characteristics of firms which engage in such analysis of training-related costs. In addition, the definition and/or development of standard measures for human resource costing should be initiated in order to make comparisons among firms. The results of this study should be re-examined to ascertain whether or not the lack of statistically significant differences on Subscales 1 and 2 related to costs are due to lack of knowledge with respect to human resource costing.

6. A similar study utilizing a structured interview schedule should be conducted with a larger number of firms reporting offering training to further investigate training modes, the number of employees trained as a percentage of the firm's work force, and employer preferences for vocational education of prospective employees.

APPENDIX A

Procedures

GENERAL PROCEDURES OF DATA COLLECTION

A master list containing names and addresses of all 428 Missouri firms engaged in manufacturing products classified as SIC-36 or SIC-38 was obtained from Information Data Corporation along with pressure sensitive mailing labels addressed to the Personnel and/or Training Director of each firm. The master list was compared to the Missouri Employment Security list for discrepancies in identification of the primary product manufactured. Where such discrepancies occurred, the Missouri Employment Security classification was adopted over the Informative Data Corporation designation.

Each instrument used in both surveys was assigned a code number in order to identify nonrespondents and to match responses with the appropriate demographic data. The code number provided for confidentiality of respondents and assured that the data were organized in a usable manner.

The Associated Industries of Missouri was contacted and agreed to prepare a cover letter endorsing the survey.

The initial mailing consisting of the cover letter, coded instrument, and stamped, self-addressed return envelope was sent November 17, 1982. Nonrespondents were mailed a reminder postcard on December 7, 1982. On January 3, 1983, nonrespondents were mailed a second cover letter, a copy of the original cover letter, a coded instrument, and a stamped return envelope. Two weeks later, 79 nonresponding firms received follow-up telephone calls soliciting the return of the instrument.

The same data collection procedures were continued for the Survey of Entry-Level Skills Training. Procedures consisted of an initial mailing in March, 1983 to 61 respondents followed by a second mailing in April, 1983 to nonrespondents.

APPENDIX B

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APPENDIX C

Instruments

INSTRUMENTS

The first instrument developed for this study was the Training Decision Inventory, a fifty-item summated rating scale which included six subscales. Additional demographic data needed to group firms on the basis of the independent variables, training offered or not offered and size of the firm, were obtained from the Missouri Directory of Manufacturing and Mining, 1982 and a training question added to the Training Decision Inventory.

The second instrument was the Survey of Entry-Level Skills Training, a two-page questionnaire designed as a follow-up to the Training Decision Inventory.

Both instruments were developed following a review of relevant research and literature and with the guidance of an advisory council composed of vocational administrators, vocational teacher educators, and State Department of Education personnel.

SURVEY CODE NUMBER _____

TRAINING DECISION INVENTORY

The following list of issues has been identified as important to a company's decision to provide structured entry-level skills training for employees. For purposes of this survey, structured entry-level skills training is defined as:

> Formal training given to qualify newly hired or present employees for work in an occupation. It does not include training given to improve or upgrade skills of currently employed workers in their present occupation. Also excluded are management, supervisory, and clerical programs. It does include apprenticeship training and any other course or program primarily concerned with teaching occupational skills.

Is structured entry-level skills training for employees provided by your firm? YES ____ NO ____

Please indicate to what extent the following issues influence your company's decisions in regard to structured entry-level skills training. Circle one number which represents your response to each issue.

5 - Influences Greatly
4 - Some Influence
3 - Undecided
2 - Very Little Influence
1 - Does Not Influence

1.	Inability to find experienced workers	5	4	3	2	1	26.	Public and private vocational schools' inability to train the level of technical worker we need	5	4	3	2	1
2.	Relevance of skills taught in educational institutions	5	4	3	2	1	27.	Incentive for workers to accept lower pay in exchange for learning opportunities	5	4	3	2	1
3.	Technical knowledge needed to stay ahead of competition	5	4	3	2	1	28.	Need to decrease employee turnover	5	4	3	2	1
4.	Cost of training staff	5	4	3	2	1	29.	Potential problems between production and training schedules	5	4	3	2	1
5.	Satisfaction of needs through informal training	5	4	3	2	1	30.	Employee career growth	5	4	3	2	1
6.	Rapidly changing manufacturing technology	5	4	3	2	1	31.	High technology production processes	5	4	3	2	1
7.	Current economic conditions	5	4	3	2	1	32.	Cost of structured training	5	4	3	2	1
8.	Public and private vocational schools' inability to train the number of workers needed	5	4	3	2	1	33.	Nature of tasks involved in training related jobs	5	4	3	2	1
9.	Accommodate for turnover	5	4	3	2	1	34.	Cost of employee compensation during training	5	4	3	2	1
10.	Need to increase productivity	5	4	3	2	1	35.	Shortage of experienced workers	5	4	3	2	1
11.	Reluctance to invest too much in any individual	5	4	3	2	1	36.	Availability of qualified instructors	5	4	3	2	1
12.	Promotion-from-within policy of the company	5	4	3	2	1	37.	Inability of public and private vocational schools to train employees for multi-skill jobs	5	4	3	2	1
13.	Shift in production processes requiring fewer skilled workers	5	4	3	2	1	38.	Employees' career development needs	5	4	3	2	1
14.	Availability of skilled labor	5	4	3	2	1	39.	Availability of space for training	5	4	3	2	1
15.	Accommodate for growth of the firm	5	4	3	2	1	40.	Risk of training employees and losing them to other firms	5	4	3	2	1
16.	Component of affirmative action program	5	4	3	2	1	41.	Anticipated tight labor market for certain job skills	5	4	3	2	1
17.	Entry-level skills can best be learned through company training program	5	4	3	2	1	42.	Conflict of training with production	5	4	3	2	1
18.	Changes in technology	5	4	3	2	1	43.	Improve worker performance	5	4	3	2	1
19.	Length of training program required to teach needed skills	5	4	3	2	1	44.	Cost of training aids	5	4	3	2	1
20	Changing production methods requiring new/different employee skills	5	4	3	2	1	45.	Public and private vocational schools' inability to train workers with job specific skills	5	4	3	2	1
21.	Cost-benefit of entry-level skills training to the organization	5	4	3	2	1	46.	Needs of minority group employees	5	4	3	2	1
22.	Return on investment of training program to this organization	5	4	3	2	1	47.	Financial capability to provide structured training	5	4	3	2	1
23.	Organization has too few skilled jobs for which structured training is needed	5	4	3	2	1	48.	Employees' inadequate educational backgrounds	5	4	3	2	1
24.	Preference to recruit trained workers	5	4	3	2	1	49.	Cost of trainers for instruction and guidance	5	4	3	2	1
25.	Job expectations of employees	5	4	3	2	1	50.	Need to make our firm attractive to workers	5	4	3	2	1

SURVEY OF ENTRY-LEVEL SKILLS TRAINING

SURVEY CODE NUMBER_____

To help with the internal control of the survey, your company has been assigned a code number. The company number is written above and registered in our office. Your return survey will be treated with the utmost confidentiality. The code number will be used solely to help our researchers formulate a second mailing or third telephone survey of those companies who have not responded to the first mailing.

INSTRUCTIONS:

1. Please respond to all items as they relate to your company and specific facility in which you work if your company operates more than one plant.
2. If you are unable to provide information on all topics, you may wish to consult with other members of your firm. Please do not forward the survey to the home office or another branch of your firm.
3. If book records are not available for some items, enter your best estimate.
4. Please complete the form and return it in the stamped, self-addressed envelope as soon as possible.

1. Does your firm provide structured entry-level skills training for the following occupations? (See cover letter for definition of this type of training.)

	Yes	No		Yes	No
Computer Operator	____	____	Lay-Out Person, Metal	____	____
Computer Programmer	____	____	Machine Tool Set-Up Person	____	____
Drafter	____	____	Mechanic, Maintenance	____	____
Electrical Technician	____	____	Mechanical Engineering Technician	____	____
Electrician	____	____	Patternmaker, Metal/Wood	____	____
Electronics Assembler	____	____	Plumber and/or Pipefitter	____	____
Electronics Technician	____	____	Industrial Engineering Technician	____	____
Sheetmetal Worker	____	____	Tool and Die Maker	____	____
Welder and Flamecutter	____	____	Filer, Grinder, Chipper, Cleaner, or Polisher	____	____

2. Does your firm provide structured entry-level skills training for occupations other than those listed above?

Yes _____ No _____

If yes, please list the occupations for which your firm provides additional structured entry-level skills training:

_____

_____

_____

_____

3. For the occupations you identified in Questions 1 and 2, which of the following would your firm prefer for its prospective skilled employees?

____ Non-high school graduates willing to learn

____ High school graduates with no specialized training

____ High school graduates with specialized vocational training

____ Post high school technical school graduates

____ College graduates

4. What is your prediction concerning structured entry-level skills training activities for the next five years?

____ Expect increase in entry-level skills training by our firm

____ Expect decrease in entry-level skills training by our firm

____ Expect firm to maintain present extent of entry-level skills training

3. For only those occupations which you identified in Questions 1 and 2, please provide the following information for your plant site.

Total Number of Employees at this Plant Site, 1981		Number of Employees Receiving Structured Entry-Level Skills Training, 1981
_____	Computer Operator	_____
_____	Computer Programmer	_____
_____	Drafter	_____
_____	Electrical Technician	_____
_____	Electrician	_____
_____	Electronics Assembler	_____
_____	Electronics Technician	_____
_____	Industrial Engineering Technician	_____
_____	Filer, Grinder, Chipper, Cleaner, or Polisher	_____
_____	Lay-Out Person, Metal	_____
_____	Machine Tool Set-Up Person	_____
_____	Mechanic, Maintenance	_____
_____	Mechanical Engineering Technician	_____
_____	Patternmaker, Metal/Wood	_____
_____	Plumber and/or Pipefitter	_____
_____	Sheetmetal Worker	_____
_____	Tool and Die Maker	_____
_____	Welder and Flamecutter	_____

Additional Occupations:

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

6. Please indicate by checking the appropriate column the type of training used for those occupations identified in Question 3.

ON-THE-JOB TRAINING (OJT) - A training process that takes place primarily on the job during actual production operations. This training may include some instruction given off the production site. Apprenticeship training and its related classroom instruction should be included in this category.

OFF PRODUCTION-SITE TRAINING (OPST) - A training process that usually takes place off the production site in a training facility such as a classroom or an equipped site used primarily for training. Count training undertaken at a facility not operated by the firm only if the company pays the cost of training in whole or in part, or pays employees wages while they are attending classes.

	OJT	OPST		OJT	OPST
Computer Operator	____	____	Lay-Out Person, Metal	____	____
Computer Programmer	____	____	Machine Tool Set-Up Person	____	____
Drafter	____	____	Mechanic, Maintenance	____	____
Electrical Technician	____	____	Mechanical Engineering Technician	____	____
Electrician	____	____	Patternmaker, Metal/Wood	____	____
Electronics Assembler	____	____	Plumber and/or Pipefitter	____	____
Electronics Technician	____	____	Sheetmetal Worker	____	____
Industrial Engineering Technician	____	____	Tool and Die Maker	____	____
Welder and Flamecutter	____	____	Filer, Grinder, Chipper, Cleaner or Polisher	____	____
Additional Occupations:					
_____	____	____	_____	____	____
_____	____	____	_____	____	____

APPENDIX D

Tables

Table 1

Type of Manufacturer
Standard Industrial Classification -
Frequency Distribution

SIC	Frequency	Percent of Population
36	271	63.31
38	157	36.68
Total	428	

Table 2

Size of Firms as Measured by Number of Employees
Total Employees--Frequency Distribution

Number of Employees	Cumulative Frequency	Percent of Population
0	5*	26.95
1-10	114	58.39
11-50	247	58.39
51-75	272	64.30
76-100	301	71.16
101-200	346	81.80
201-500	396	93.62
501-1,000	411	97.16
1,000+	423	100.00

*Data not available for 5 firms.

Table 3

Training Decision Inventory -
Subscale 1--Cost-Benefit

Item Number	Corrected Item Total Correlation Coefficient	Item Content
11.	.411	Reluctance to invest too much in any individual
21.	.581	Cost-benefit of entry-level skills training to the organization
22.	.574	Return on investment of training program to this organization
27.	.478	Incentive for workers to accept lower pay in exchange for learning opportunities
32.	.527	Cost of structured training
34.	.559	Cost of employee compensation during training
40.	.494	Risk of training employees and losing them to other firms
47.	.518	Financial capability to provide structured training

Note. N = 8 Mean = 23.646
Minimum value = 8.00 Maximum value = 39.00

Table 4

Training Decision Inventory -
Subscale 2--Expenditures

Item Number	Corrected Item Total Correlation Coefficient	Item Content
4.	.507	Cost of training staff
19.	.543	Length of training program to teach needed skills
36.	.631	Availability of qualified instructors
39.	.525	Availability of space for training
44.	.616	Cost of training aids
49.	.598	Cost of trainers for instruction and guidance

Note. N = 6 Mean = 17.333
Minimum value = 6.00 Maximum value = 30.00

Table 5

Training Decision Inventory -
Subscale 3--Employee Motivation/Affirmative Action

Item Number	Corrected Item Total Correlation Coefficient	Item Content
12.	.430	Promotion-from-within policy of the company
16.	.529	Component of affirmative action program
25.	.614	Job expectations of employees
28.	.607	Need to decrease employee turnover
30.	.595	Employee career growth
38.	.587	Employees' career development needs
43.	.688	Improve worker performance
46.	.511	Needs of minority group employees
50.	.674	Need to make our firm attractive to workers

Note. N = 9 Mean = 25.887
Minimum value = 9.00 Maximum value = 43.00

Table 6

Training Decision Inventory -
Subscale 4--Technology/Productivity Issues

Item Number	Corrected Item Total Correlation Coefficient	Item Content
3.	.579	Technical knowledge needed to stay ahead of competition
6.	.573	Rapidly changing manufacturing technology
10.	.601	Need to increase productivity
18.	.653	Changes in technology
20.	.572	Changing production methods requiring new/different employee skills
29.	.581	Potential problems between production and training schedules
31.	.620	High technology production processes
42.	.588	Conflict of training with production

Note. N = 8 Mean = 23.179
Minimum value = 8.00 Maximum value = 40.00

Table 7

Training Decision Inventory -
Subscale 5--Labor Market Issues

Item Number	Corrected Item Total Correlation Coefficient	Item Content
1.	.587	Inability to find experienced workers
5.	.343	Satisfaction of needs through informal training
7.	.457	Current economic conditions
9.	.501	Accommodate for turnover
13.	.349	Shift in production processes requiring fewer skilled workers
14.	.530	Availability of skilled labor
15.	.702	Accommodate for growth of the firm
23.	.115	Organization has too few skilled jobs for which structured training is needed
24.	.516	Preference to recruit trained workers
35.	.600	Shortage of experienced workers
41.	.643	Anticipated tight labor market for certain job skills

Note. N = 11 Mean = 33.476
Minimum value = 10.00 Maximum value = 53.00

Table 8

Training Decision Inventory -
Subscale 6--Educational Preparation

Item Number	Corrected Item Total Correlation Coefficient	Item Content
2.	.476	Relevance of skills taught in educational institutions
8.	.558	Public and private vocational schools' inability to train the number of workers needed
17.	.242	Entry-level skills can best be learned through company training program
26.	.588	Public and private vocational schools' inability to train the level of technical worker we need
33.	.495	Nature of tasks involved in training-related jobs
37.	.607	Inability of public and private vocational schools to train employees for multi-skill jobs
45.	.545	Public and private vocational schools' inability to train workers with job specific skills
48.	.581	Employees' inadequate educational backgrounds

Note. N = 8 Mean = 22.892
Minimum value = 8.00 Maximum value = 40.00